

***Daipotamon minos*, a new genus and species of potamid crab  
(Crustacea: Decapoda: Brachyura) from a cave in China**

Peter K. L. Ng and Peter Trontelj

(PKLN) Department of Zoology, National University of Singapore,  
Kent Ridge, Singapore 0511, Republic of Singapore;  
(PT) Department of Biology, University of Ljubljana,  
pp 95, Vecna pot 111, 6111 Ljubljana, Slovenia

*Abstract.*—A new genus and species of potamid freshwater crab, *Daipotamon minos*, is described from a cave in Guizhou Province, China. *Daipotamon*, new genus, is allied to *Sinopotamon* Bott, 1967, and *Tenuilapotamon* Dai, Song, Li, Chen, Wang & Hu, 1984, but differs distinctly in the form of the male abdomen and first male pleopods.

The freshwater crab fauna of mainland China is exceptionally diverse. Some 20 species and subspecies of potamid freshwater crabs have been reported from Guizhou Province in mainland China (Dai et al. 1984, 1985; Dai & Yuan 1988, Dai 1990), although none have been reported from caves thus far. Between February and March 1995, a Slovenian-Chinese caving expedition made explorations of the karst caves in Libo County, southeastern Guizhou, China. Specimens collected from one of these caves proved to belong to a new genus and species of potamid freshwater crab. The present paper describes the new taxa.

The specimens are deposited in the Department of Biology, University of Ljubljana, Slovenia (ULB); Zoological Reference Collection, Department of Zoology, National University of Singapore (ZRC); and Academia Sinica, Beijing, China (ASB). The abbreviations G1 and G2 are used for the male first and second pleopods (gonopods) respectively. The terminology adopted here essentially follows that used by Ng (1988). The synonymy of Sinopotamidae Bott, 1970, and Isolapotamidae Bott, 1970, under the Potamidae Ortmann, 1896, proposed by Ng (1988), is followed here.

Family Potamidae Ortmann, 1896

*Daipotamon*, new genus

*Diagnosis.*—Carapace broader than long, dorsal surface smooth, gently convex; epibranchial tooth small, blunt; external orbital tooth broadly triangular. Exopod of third maxilliped reaching to mid-length of merus, flagellum long, extending beyond width of merus. Male abdomen broadly triangular; telson subequal in length to segment 6; lateral margins of segment 6 concave, telson deeply concave. G1 stout, relatively short; terminal segment short, tubular, gently bent inwards towards median part of thoracic sternum. G2 subequal in length to G1; with distinct distal segment shorter than basal segment.

*Type species.*—*Daipotamon minos*, new species, by present designation. Gender neuter.

*Discussion.*—The establishment of a new genus is necessary because the type species, *Daipotamon minos*, new species, cannot be assigned to any known genus. *Daipotamon*, new genus, appears to be closest to *Sinopotamon* Bott, 1967 (type species *Potamon davidi* Rathbun, 1904) and *Tenuilapotamon* Dai et al., 1984 (type species *Sinopotamon joshueinse* Dai et al., 1975), with regards to the general morphology of the carapace and



Fig. 1. *Daipotamon minos*, new genus and species. Male holotype (carapace width 21.5 mm, carapace length 16.6 mm) (ZRC 1996.1044). Dorsal view.

legs, as well as the presence of a long flagellum on the exopod of the third maxilliped. However, *Daipotamon* differs in several key aspects. The lateral margins of the telson of both *Daipotamon* and *Sinopotamon* are deeply concave, but *Daipotamon* can be distinguished by its proportionately broader and shorter male abdomen, with a short telson with a more truncated tip. *Tenuilapotamon* resembles *Daipotamon* in having a broad male abdomen, but in *Tenuilapotamon* this is due to the strongly convex margins of the distal segments. In *Daipotamon*, the broad appearance of the male abdomen is due to the proportionately shorter and broader segments. The lateral margins of the male telson of *Tenuilapotamon* are gently concave while those of *Daipotamon* are deeply concave. The G1 of *Daipotamon* is also quite different from both *Sinopotamon* and *Tenuilapotamon*, being proportionately stouter, with a short and cylindrical terminal segment whose distal part lacks folds.

The characters recognized here are diagnostically significant at the generic level.

The generic characters of *Sinopotamon* and *Tenuilapotamon* are constant, with some 36 and 10 species and subspecies of *Sinopotamon* and *Tenuilapotamon* respectively, already known.

*Etymology*.—The genus is named after Dr Dai Ai-Yun, whose detailed work on Chinese freshwater crabs over the years has provided a strong foundation for their study. The name is an arbitrary combination of her surname (Dai) and *Potamon*.

*Daipotamon minos*, new species  
Figs. 1–3

*Material examined*.—Holotype: male (carapace width 21.5 mm, carapace length 16.6 mm) (ZRC 1996.1044), Jama La Tai Dong (=Cave), Jia Ban (25°10'N, 107°03'E), Libo County, southern Guizhou Province, China, leg. P. Trontelj, 6 Mar 1995. Paratypes: 2 females (larger specimen with carapace width 25.0 mm, carapace length 19.5 mm) (ZRC 1996.1045, 1046), 2 females (ULB), 1 female (AS), same data as holotype.

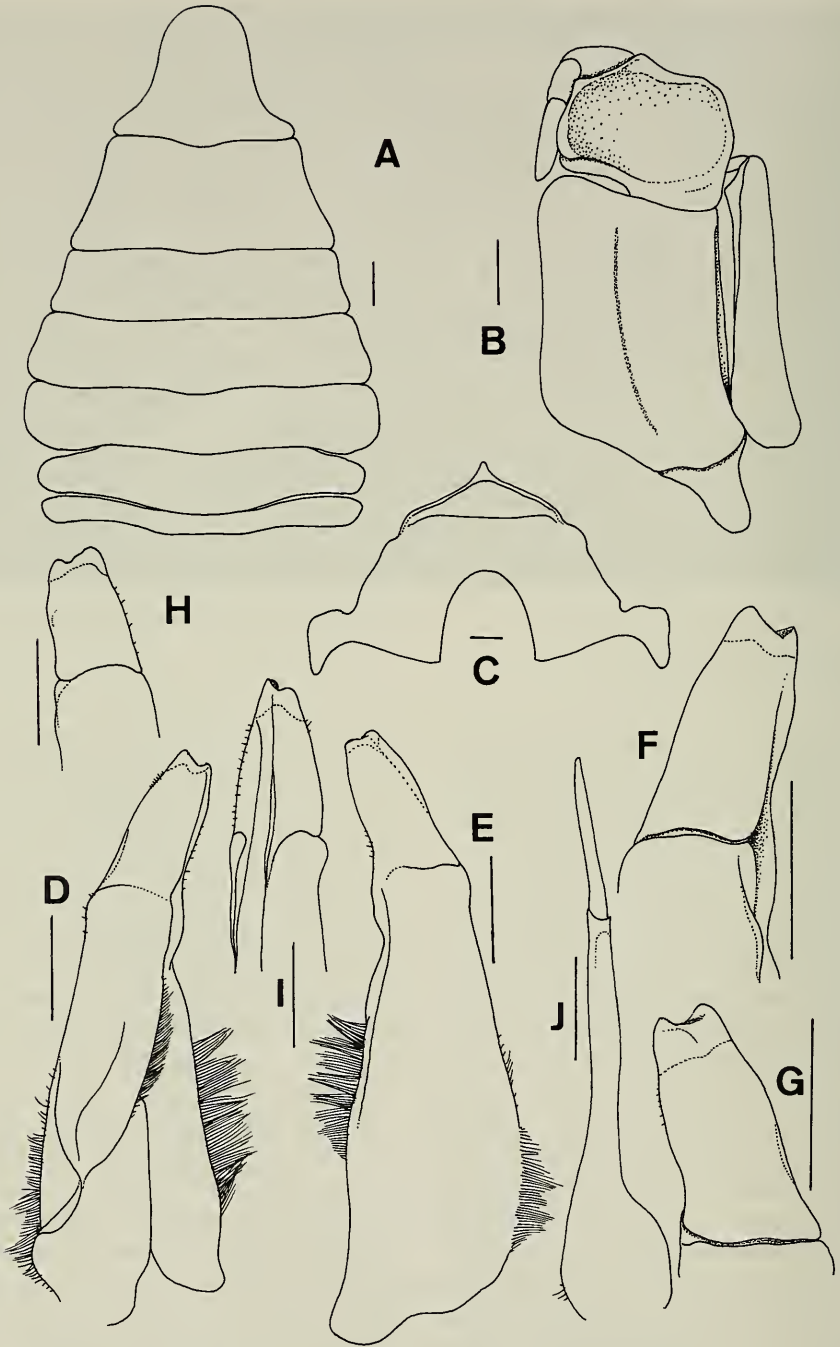


Fig. 2. *Daipotamon minos*, new genus and species. Male holotype (carapace width 21.5 mm, carapace length 16.6 mm) (ZRC 1996.1044). A, abdomen; B, left third maxilliped; C, anterior thoracic sternites; D, right G1 (ventral view); E, right G1 (dorsal view); F, right G1 terminal segment (ventral view); G, right G1 terminal segment (dorsal view); H, right G1 terminal segment (dorsomarginal view); I, right G1 terminal segment (ventromarginal view); J, left G2. Scales = 1.0 mm.





Fig. 3. *Daipotamon minos*, new genus and species. Female paratype (carapace width 25.0 mm, carapace length 19.5 mm) (ZRC 1996.1045). A, abdomen; B, right anterior sternum showing vulva. Scales = 1.0 mm.

*Description of male holotype.*—Carapace distinctly broader than long, not inflated or swollen; dorsal surface gently convex, smooth with numerous punctae especially on anterior  $\frac{1}{3}$ ; anterolateral (hepatic and branchial) regions smooth; cervical groove indistinct, very shallow, broad; H-shaped median depression shallow; cardio-intestinal region with shallow transverse groove; pterygostomial, suborbital and sub-branchial regions smooth. Epigastric cristae very low, rugose; postorbital cristae very low, not distinct or sharp. External orbital tooth and anterolateral margin strongly convex, cristate, lined with rounded granules; external orbital tooth broadly triangular, outer margin gently convex; epibranchial tooth very small, low, blunt, separated from external orbital tooth by small but distinct notch; frontal margin smooth, gently sinuous; supraorbital margin with fine, rounded granules; infraorbital margin smooth. Ischium of third maxilliped rectangular, with

shallow submedian sulcus; merus medially depressed; exopod reaching to mid-length of merus, with well developed flagellum longer than width of merus.

Outer surfaces of chelipeds gently rugose, fingers subequal to slightly longer than palm; carpus with prominent sharp tooth, with small, sharp basal granule. Second ambulatory leg longest; dactylus slender, cross-section quadrate; surfaces of meri gently rugose, dorsal margin gently serrate to uneven, without subdistal tooth or spine.

Surface of anterior thoracic sternites punctate; suture between thoracic sternites 2 and 3 gently sinuous; other anterior sternites completely fused. Male abdomen with all segments free, broadly triangular, reaching longitudinal imaginary line connecting anterior edges of cheliped bases; telson longer than segment 6; segment 6 approximately 2 times length of segment 5; lateral margins of telson deeply concave; lateral margins of segments 5 and 6 gently con-

cave; segment 1 longitudinally narrow; transversely broad, reaching bases of coxae of fourth ambulatory legs.

G1 stout, relatively short, terminal and subterminal segments clearly demarcated; terminal segment short, approximately 0.3 times length of subterminal segment, sub-tubular, gently bent inwards towards median part of thoracic sternites in situ (ventral view), tip bifurcated; distal part of outer margin of subterminal segment with distinct broad cleft; groove for G2 ventral in position; G2 subequal in length to G1, distal segment well developed, approximately 0.4 times length of basal segment.

*Discussion.*—The exopod of the right third maxilliped of the male holotype is damaged, and reaches only to just beyond the anterior edge of the ischium. On the left third maxilliped, however, it reaches to mid-length of the merus. This condition is the same for all female paratypes.

The non-sexual characters of the female paratypes (all mature) generally agree very well with those of the male holotype. The transverse cardio-intestinal groove in the females, however, is indistinct to absent, the posterior surface of the carapace being almost flat. The female abdomen and part of the thoracic sternum with the right vulva are depicted on Fig. 2.

*Daipotamon minos* does not show any obvious features such as reduced eyes, the loss of body pigmentation, or elongated pereopods to suggest it is a troglobitic species (Guinot 1988, Ng 1991, 1992). The eyes are well developed, filling most of the orbit, and the corneas are fully formed and completely pigmented. It thus seems likely that this species might also occur outside caves. It must be noted, however, that there are cave species of freshwater crabs with well developed eyes and possessing body pigmentation which are wholly troglobitic or are predominantly cavernicolous, and which make only occasional or very rare forays into epigeal habitats (see Guinot 1988, Ng 1989, Ng & Goh 1987, Ng & Yussuf 1990, Ng & Takeda 1994).

The type locality of *Daipotamon minos*, La Tai Cave, is northeast of Libo, at an altitude of about 600 m above sea level. The entrance of this cave is situated at the foot of a limestone mountain. A small river flows down the mountain and into the cave. At the time of the collections, the rate of flow of the river was estimated to be about 10 liters per second. In the cave itself, the main gallery follows the river until it flows through a hole. The area outside the cave is flat and is extensively cultivated (mainly rice and rape), with many small fields and irrigation ditches.

In the subterranean course of the river, the fauna was generally poor. Large amounts of empty mollusc shells (*Corbicula* sp.; some gastropods: *Gyraulus* sp., and species of Pomatiastidae, Cyclophoridae and Pupillidae), some larvae of Plecoptera (cf. *Leuctra* sp.), and a species of surface fish, were present in the hole. The specimens of *Daipotamon minos* were caught about 400 m from the entrance in a section with slowly flowing or stagnant water about 1 m deep. The bottom was covered with stones, sand and mud. Three crabs were caught in shallow water by hand, the rest with small fish traps (plastic bottles) baited with yoghurt. Two traps were left for about two hours in the water, near the area where the first crabs had been caught.

In a lateral gallery of the same cave, the terrestrial cave life was substantially richer: Gastropoda (Pulmonata: cf. *Euplecta* sp., Ariophantidae), Isopoda Oniscidea (Trichoniscidae), Diplopoda (apparently troglomorphic Glomeridae, Doratodesmidae, and a highly troglomorphic species of Polydesmida), Orthoptera (Rhaphidophoridae), and troglomorphic Coleoptera (Carabidae: Platynini).

*Etymology.*—The species is named after Minos, Greek judge of the lower world. Used as a noun in apposition.

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